

Claims

- [c1] 1.A medical imaging system comprising:
a transceiver bracket being sized, shaped and configured for securing with an endocavity medical imaging transceiver;
a transceiver/bracket covering sterile sheath disposed over said medical imaging transceiver and said transceiver bracket;
a needle guide disposed over said transceiver/bracket covering sterile sheath and cooperating with said transceiver bracket;
a lock comprising a void in said transceiver bracket and a first pliable side clamp leg with a first side clamp leg protuberance; and
said first side clamp leg protuberance being configured to separate from said first side clamp leg at a level of applied force which is lower than a level of applied force which would cause said needle guide to be detached from said transceiver bracket.
- [c2] 2.A system of claim 1 wherein said first side clamp leg is coupled to a needle guide.
- [c3] 3.A system of claim 2 further comprising a second side clamp leg disposed on an opposing side of said needle guide.
- [c4] 4.A system of claim 3 further comprising a second side clamp leg protuberance coupled to said second side clamp leg and disposed on an opposing side of said needle guide with respect to said first side clamp leg protuberance.
- [c5] 5.A system of claim 1 wherein said needle guide further comprises a needle guide enlarged needle-receiving area which is sized and configured to receive needles at locations and angles which would otherwise exclude mating of a needle with a needle guide central cannula section.
- [c6] 6. A system of claim 5 further comprising a needle guide having a needle guide enlarged proximal end which facilitates grasping of said needle guide and pulling in a predetermined direction.
- [c7] 7.An endocavity medical imaging system comprising:
an endocavity medical imaging transceiver, for generating image signals;

a mounting bracket, coupled to said endocavity medical imaging transceiver;
a needle guide sized and configured to couple with said mounting bracket so as
to create a lock between said needle guide and said mounting bracket when a
protuberance mates with a structure; and,
said lock being a single use lock such that once said protuberance is removed
from said structure, said lock is thereafter incapable of affixing said needle
guide to said mounting bracket.

[c8] 8.A system of claim 7 wherein said lock comprises a plurality of protuberances.

[c9] 9.A system of claim 8 wherein said structure is a void in said mounting bracket.

[c10] 10.A system of claim 9 having a needle guide central cannula section which is
recessed in a mounting bracket needle guide receiving slot in said mounting
bracket.

[c11] 11.A system of claim 10 wherein said mounting bracket is a partial sleeve
disposed about a reduced cross-section medical imaging transceiver middle
section of said endocavity medical imaging transceiver.

[c12] 12.A system of claim 11 wherein said partial sleeve is sized and configured to
provide a clamping force on said reduced cross-section medical imaging
transceiver middle section so as to secure said partial sleeve to said reduced
cross-section medical imaging transceiver middle section.

[c13] 13.A system of claim 12 wherein said needle guide is sized and configured to
apply a needle guide clamping force on said mounting bracket by biasing each
of a plurality of protuberances into contact with a structure.

[c14] 14.A system of claim 13 wherein said needle guide clamping force is created
when said needle guide is moved toward said mounting bracket along a line
substantially perpendicular to a longitudinal axis of said mounting bracket.

[c15] 15.A system of claim 14 wherein said each of said plurality of protuberances
has a strength characteristic of attachment to said needle guide such that said
strength characteristic of attachment to said needle guide is sufficient to allow
each of said plurality of protuberance to maintain in a full contact relationship

with said needle guide when said needle guide is moved along said line toward said mounting bracket and said strength characteristic of attachment to said needle guide is insufficient to maintain said full contact relationship for all of said plurality of protuberances, when said needle guide is moved along said line in a direction away from said mounting bracket, so that said needle guide becomes detached from said mounting bracket.

[c16] 16.A system of claim 15 wherein one of said plurality of protuberances is sheared from said full contact relationship when said needle guide is moved along said line away from contact with said mounting bracket.

[c17] 17.An apparatus for guiding a medical instrument in proximity to an endocavity medical imaging transceiver, the system comprising:
a needle guide central cannula section, having a cannula longitudinal axis with a hole running along said cannula longitudinal axis, said hole being sized and configured to receive therethrough a medical instrument which is capable of translational motion along said cannula longitudinal axis;
means for locking said needle guide central cannula section to an exterior surface, such that said needle guide central cannula section is no longer capable of locking to said exterior surface, after said needle guide central cannula section is once locked to said exterior surface and then removed from said exterior surface; and
wherein said exterior surface is an exterior surface of an endocavity member having an endocavity longitudinal axis which is parallel to said cannula longitudinal axis.

[c18] 18.An apparatus of claim 17 wherein said means for locking comprises a protuberance which mates with a void to lock and said protuberance becomes at least partially detached when said needle guide central cannula section is removed from said exterior surface.

[c19] 19.A method of guiding medical instruments in conjunction with an endocavity medical imaging transceiver comprising the steps of:
providing an endocavity transceiver, for generating image signals representative of internal portions of a human body;

securing a cannula to said endocavity transceiver;
inserting said endocavity transceiver and said cannula into an orifice of a human body;
providing a medical instrument;
manipulating said medical instrument within said cannula;
removing said endocavity transceiver from said orifice;
pulling said cannula away from said endocavity transceiver such that means coupled to said cannula for securing to said endocavity transceiver is no longer capable of securing said cannula to said endocavity transceiver; and,
disposing said cannula.

[c20]

20.A system for guiding needles comprising:
an endocavity medical imaging transceiver configured for generating image signals representative of interior portions of a human body;
a mounting bracket coupled to said endocavity medical imaging transceiver;
a needle guide coupled to said mounting bracket;
said mounting bracket having a partial sleeve shape configured for coupling with a reduced cross-section medical imaging transceiver middle section of said endocavity medical imaging transceiver;
said mounting bracket further having a mounting bracket distal end and a mounting bracket proximal end and a mounting bracket needle guide receiving slot disposed between said mounting bracket distal end and said mounting bracket proximal end;
said mounting bracket further having a mounting bracket protuberance receiving void therein;
said needle guide comprising a needle guide distal end and a needle guide enlarged proximal end and a needle guide central cannula section disposed therebetween;
said needle guide further comprises a side clamp leg with a side clamp leg protuberance thereon, where the side clamp leg protuberance is separated from the side clamp leg by a substantially circular-shaped void;
said needle guide further including a needle guide enlarged needle-receiving area having a funnel region for guiding needles into said needle guide central

cannula section;

said side clamp leg protuberance is configured to mate with mounting bracket protuberance receiving void and to secure said needle guide to said mounting bracket;

said side clamp leg protuberance having a predetermined strength characteristic which is insufficient to keep said side clamp leg protuberance intact with said side clamp leg when said needle guide is removed from said mounting bracket by applying a lifting force on said needle guide in a direction substantially perpendicular to a longitudinal axis of said needle guide central cannula section.

- [c21] 21. A method of guiding a needle with respect to a medical imaging transceiver, comprising the steps of:
- providing an endocavity medical imaging transceiver and a transceiver bracket disposed in a transceiver/bracket covering sterile sheath;
 - providing a needle guide outwardly of said sheath;
 - engaging a lock member which fixes said needle guide to said transceiver bracket;
 - positioning said endocavity medical imaging transceiver within a body cavity;
 - inserting a needle into said needle guide;
 - performing a medical procedure using said needle and said medical imaging transceiver;
 - removing said needle from said needle guide;
 - applying a force on said lock member which permanently damages said lock member; and,
 - discarding said needle guide.